Job Vacancy Available

Marie Skłodowska-Curie actions
Innovative Training Network (ITN-ETN)
"BASE-LiNE Earth"

We invite applications for a 3 year PhD position at The Department of Geosciences and Natural Resource Management, Faculty of Science, University of Copenhagen to undertake competitive high-level research on the complex Phanerozoic seawater history through the determination of original proxy information preserved in reliable ancient geological archives like fossil brachiopods using cutting edge technologies and experimental approaches within the Marie Skłodowska-Curie Innovative Training Networks (ITN-ETN) »Brachiopods As SEnsitive tracers of gLobal mariNe Environment: Insights from alkaline, alkaline Earth metal, and metalloid trace element ratios and isotope systems«. BASE-LiNE Earth is funded through the HORIZON2020 program of the European Union and consists of 14 full partners and seven associated partners out of 11 countries (Austria, Australia, Canada, Czech Republic, Denmark, France, Germany, Israel, Italy, Poland, Slovak Republic) among them internationally leading researchers in the field of geology, chemistry and isotope geochemistry, marine biology and ecology as well as numerical modelling and engineering.

The project is coordinated at the GEOMAR Helmholtz Centre for Ocean Research Kiel, Germany. BASE-LiNE Earth will run until December 2018.

All positions offered are full-time and fixed term for 3 years. Successful applicants will benefit from training and networking program delivered jointly by academic and non-academic partners. As a result, BASE-LiNE Earth fellows will gain both, research experience and complementary skills such as career planning, communicating science, and management techniques. Researchers will mainly work in their host institution, but they will also have the possibility to visit another BASE-LiNE Earth partner for secondment activities, which could be either in academia or in industry. On completion of their fellowship, successful applicants are expected to be among the future leaders in their respective fields. The Researchers recruited for these positions are expected to be an active part within the BASE-LiNE Earth consortium by participating in network wide activities such as workshops and conferences. The candidate will be part of an international, interdisciplinary team at universities and research institutions, and is expected to attend the actions as announced in the proposal.

In order to strengthen the role of women in science the application of females for an ESR position is strongly encouraged. Handicapped persons with comparable qualifications receive preferential status.

Please submit your complete application (including a CV [max. 3 pages], a letter of motivation for the position and a statement of your research interests [max. 1 page], relevant certificates, plus contact details of at least two referees) to the contact below quoting BASE-LiNE Earth_ESR07. Applications are accepted until the positions are filled, but we intend to conduct a first evaluation by May 31st 2015.
ESR07—PhD position

Test Chromium and Uranium stable isotopes in brachiopods as a paleo-redox proxy in seawater

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SHORT DESCRIPTION: This PhD project focuses on the development and use of non-traditional stable isotope systems (chromium and uranium) in brachiopods for their potential use as paleo-redox proxies in seawater. The project is a combination of methods development in the laboratory, a test period in which the systems are applied to control-cultured brachiopods, and an applications part during which the systems is applied on modern and fossil shells and associated carbonates from some important evolutionary periods in Earth’s history. The ultimate goal is to link the systems to continental weathering and to climate change on Earth.

FULL JOB DESCRIPTION

This PhD project focuses on the development and use of non-traditional stable isotope systems (with focus on chromium (δ⁵³/⁵²Cr) and uranium (δ²³⁸/²³⁵U)) in brachiopods for their potential use as paleo-redox proxies in seawater. In a first phase appropriate chemical extraction schemes and techniques for the separation of pure fractions of chromium and uranium from skeletal carbonates are developed and tested. Proxy calibration will be performed using laboratory cultured brachiopods. This approach will allow to determine potential kinetic fractionation effects between seawater and the skeletal carbonates and to decipher the uptake of Cr and U species from seawater and into brachiopod shells. Methods will then be applied to modern and fossil brachiopods and sediments from worldwide locations. These measurements will be completed by measurements of major, trace and rare earth elements. The study aims to the redox-potential of modern and past shallow seawater to continental weathering and to climate change at some important periods in Earth’s history (e.g. mass-extinction events).

The project will be embedded into the Research Group of Geochemical Mineralogical and Petrological Earth Science, as part of the Geology Section at the Department of Geoscience and Natural Resource Management, University of Copenhagen, Denmark. The department hosts all necessary technical and analytical facilities, including ultra-clean laboratories, to conduct the proposed research. Among the central facilities are three thermal ionization mass spectrometers, an electron microprobe, XRF and XRD analyzers, ICP-MS and ICP-OES instruments. Via collaborative agreements with the Geological Survey of Denmark and Greenland, also a laser ablation ICP-MS facility will be available. Study and secondment activities at other institutions linked to the BASE-LiNE Earth project will allow for comprehensive topical expansions of the PhD study. A tight collaboration amongst the BASE-LiNE Earth nodes will set an ideal basis for this and all the other PhD projects of this call.

Qualifications:

As a successful candidate you should have

- A MSc degree in a relevant field such as geology, geochemistry, or biogeochemistry
- The ability to work in an internationally-oriented environment
- A broad interest in geosciences, and the willingness and capacity to work independently
- The willingness to travel
- You should be fluent in oral and written English, since the host group is highly international in composition and publication aims
- An interest in extensive laboratory work and isotope geochemical analyses
Employment conditions:
The position is offered for three years full-time position, starting summer/ autumn 2015. In accordance with the Marie Skłodowska-Curie rules, the salary will be calculated as follows:

Annual salary: ~57.000 €* plus in case of family obligations** additionally 6000,-€.
* This amount is based on the relevant budget concerning the employment of the EU-Researcher. After deduction of the employer’s social insurance share, it amounts to the gross salary for the activity. Employees gross salary includes taxes, social security, insurance, pension summing up the following:

1. The Living Allowance is a gross EU contribution to the salary costs of the researcher, calculated individually for each European country. “The net salary results from deducting all compulsory (employer/employee) social security contributions as well as direct taxes (e.g. income tax) from the gross amounts. The final amount will not change during the secondment activities. The primary host will ensure that the researcher is covered under the social security scheme. During the secondment the social security provision will also cover the researchers during this period.” (Ref: Guide for Applicants, Marie Skłodowska-Curie Actions).

2. The Mobility Allowance: All eligible researchers recruited within an ETN/ITN are entitled to receive this allowance. It contributes to the expenses of the researcher caused by the mobility. The amount of the mobility allowance is specified in Table 3 of the MSCA Work Programme and for the calls 2014-2015 it amounts to €600 per month.” (Ref: Guide for Applicants, Marie Skłodowska-Curie Actions). According to the country-specific requirements this amount may be subject to taxation.

3. Family Allowance of €500 per month will be paid should the researcher be eligible for this allowance. See ** below.

** In this context, family is defined as persons linked to the researcher (i) by marriage, or (ii) a relationship with equivalent status to a marriage recognised by the legislation of the country where this relationship was formalised; or (iii) as dependent children who are actually being maintained by the researcher. The family status of a researcher will be determined at the time of their (first) recruitment in the project and will not evolve during the project lifetime.” (Ref: Guide for Applicants, Marie Skłodowska-Curie Actions).

In order to be eligible, each applicant must simultaneously fulfil the following criteria at the time of recruitment:

- **Mobility:** At the time of recruitment, the applicant must not have resided or carried out his/her main activity (work, studies, etc...) in the country of the host organization for more than 12 months in the 3 years immediately prior to his/her recruitment. Compulsory national service and/or short stays such as holidays are not taken into account.

- **Qualifications and research experience:** The applicant must fulfil the requirements defined for Early Stage Researchers (ESRs): ESRs are researcher who, at the time of recruitment, has **NOT yet been awarded the doctorate degree** and is in the first 4 years (full-time equivalent) of his/her research career.

The University of Copenhagen wishes our staff to reflect the diversity of society and thus welcomes applications from all qualified candidates regardless of personal background.

Additional information on BASE-LiNE Earth and further job descriptions can be found on our website, [https://www.baseline-earth.eu/](https://www.baseline-earth.eu/).